

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
KNOX CITY, TEXAS

NOTICE OF RELEASE OF HONDO GERMPLASM VELVET BUNDLEFLOWER
SELECTED CLASS OF NATURAL GERMPLASM

The U.S. Department of Agriculture, Natural Resources Conservation Service, Knox City Plant Materials Center announces the release of a selected ecotype of velvet bundleflower, *Desmanthus velutinus* Scheele. As a selected release this plant will be referred to as Hondo Germplasm velvet bundleflower. It has been assigned the PI number 477961. Hondo Germplasm is released as a selected class of certified seed (natural track).

This alternative release procedure is justified because there are no commercial varieties of velvet bundleflower available for use in Texas.

Collection Site Information: Hondo Germplasm was originally collected in 1969 from native plants located in the eastern part of Medina County approximately 8 miles from the town of Hondo (N. Lat. 29°20', W Long 98° 90'). The collection site is located southeast of the town of Dunley along a county road that runs alongside the Southern Pacific railroad. Elevation at the collection site is approximately 600 feet; the soil at the collection site is classified as Victoria clay, 0 to 1 percent slope. Average precipitation for the area is around 28 inches. Other plants growing in association included mesquite, little bluestem, silver bluestem, sideoats grama and bristlegrass. The collection site is located in MLRA 83A - Northern Rio Grande Plains.

Description: Hondo Germplasm velvet bundleflower, *Desmanthus velutinus*, is a native, perennial, warm-season, legume. The plant is described as several widely spreading, somewhat decumbent smooth stems up to 2 ft. long growing from a perennial root. Leaves are bluish-green 3-4 inches long, twice pinnate with 3 to 6 pairs of divisions; leaflets are numerous, about 1/6 inch in length. The flowers are white "powder-puff" clusters about 1 inch in diameter. Velvet bundleflower blooms from April through June. Seeds are bore in straight pods 2-3 inches in length. Seed generally matures from mid July to late August.

Method of Breeding and/or Selection: Hondo Germplasm was initially evaluation against 3 other accessions in the 70's and was selected as the most superior accession. In 1980, it was decided to recollect velvet bundleflower since three samples were not representative of the state. In 1981 ten new collections were evaluated along with the Hondo Germplasm. Only five accessions survived into 1982 and 1983. In 1983 Hondo Germplasm was again selected as the top accession based on survivability, vigor and overall plant performance. Hondo Germplasm met the selection criteria of finding a native legume suitable for range reseeding and wildlife use. In 1982 clipping studies show Hondo Germplasm to have similar crude protein and digestibility levels as the other native legumes. Seed production at the Plant Materials Center averages about 500 pounds/acre with two harvests (spring, fall) possible each year. An average PLS of 90% can be expected. See attachment 1 (pages 4-5) for Initial Evaluation Summary and Summary of Forage Quality Study.

Environmental Impact Assessment: Hondo Germplasm velvet bundleflower is a selection of naturally occurring germplasm and has been unaltered from its original collection. Hondo Germplasm did not meet the assessment of a plant that would become invasive based on literature review and the attached "Invasive Species Worksheet" (see attachment 2, pages 6-13).

Conservation Use: Hondo Germplasm may be used as a component in seed mixtures for range seeding and pasture plantings. Goats, sheep and deer favor Hondo Germplasm as well as other bundleflowers. Its forage value is good while young and tender. After seed heads mature, forage is fair for livestock. As with all native legumes it must be managed accordingly to avoid overgrazing. Wildlife can utilize the plants and seed for food. The plants provide a good seed food crop for quail. Hondo Germplasm may be utilized in filterstrips, field borders, contour buffer strips, in riparian forest buffers, and for erosion control plantings.

Anticipated Area of Adaptation: Hondo Germplasm velvet bundleflower is adapted in MLRAs 42, 78A, B, C, D, 80A, B, 81A, B, C, 82, 83A, B, C, D, 84B, C, 85, 86A, B, and 87A, B in Texas and southern Oklahoma. Velvet bundleflower is widely distributed throughout central, south, and west Texas. Velvet bundleflower occurs mostly on calcareous and limestone soils. Velvet bundleflower is not adapted to wet areas or areas with heavy woody cover.

Availability of Plant Materials: Generation 0 seed (equivalent to Breeder seed) will be maintained by the USDA-NRCS Plant Materials Center at Knox City, Texas. Field production (G1) seed is available through the Texas Foundation Seed Service to interested parties for increase purposes.

References:

Correll, S.D., and M.C. Johnson. 1970. Manual of the vascular plants of Texas. Texas Research Foundation.

Hatch, S.L., Checklist of the Vascular Plants of Texas, 1990

USDA-SCS Plant Collection Guide, Velvet bundleflower, 1982

Prepared by:

USDA-NRCS, Plant Materials Center, 3776 FM 1292, Knox City, TX 79529, 940-658-3922.

Signatures for release of:

Hondo Germplasm velvet bundleflower (*Desmanthus velutinus*)


Name

7-7-03

Date

Dr. Larry D. Butler, State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Temple, Texas


Name

8/11/03

Date

for Director, Ecological Sciences Division
United States Department of Agriculture
Natural Resources Conservation Service
Washington, D.C.

Attachment 1 : Summary of Initial and Advanced Evaluation of *Desmanthus velutinus*,
Velvet Bundleflower

Initial Evaluation Summary - 1981-1983

1981 Evaluation of velvet bundleflower

Accn Number	Height	Width	% Stand	Spring Vigor	Fall Vigor	Seed Amount	
17601	10	80	20	5.00	9.00		prostrate bundleflower
18866	20	40	10	7.00	5.00	7.00	
18868	20	80	10	5.00	4.00	6.00	
18869	30	80	10	5.00	6.00	6.00	
18871	20	70	10	5.00	7.00	7.00	
18872	0	0	0	0.00	0.00	0.00	
19408	0	0	0	0.00	0.00	0.00	
27097	10	30	10	5.00	4.00	2.00	prostrate bundleflower
477961	40	80	50	5.00	2.00	2.00	
477961	50	70	40	5.00	3.00	3.00	
SUM	200	530	160	42.00	40.00	33.00	
MEAN	20	70	10	5.00	4.00	3.00	

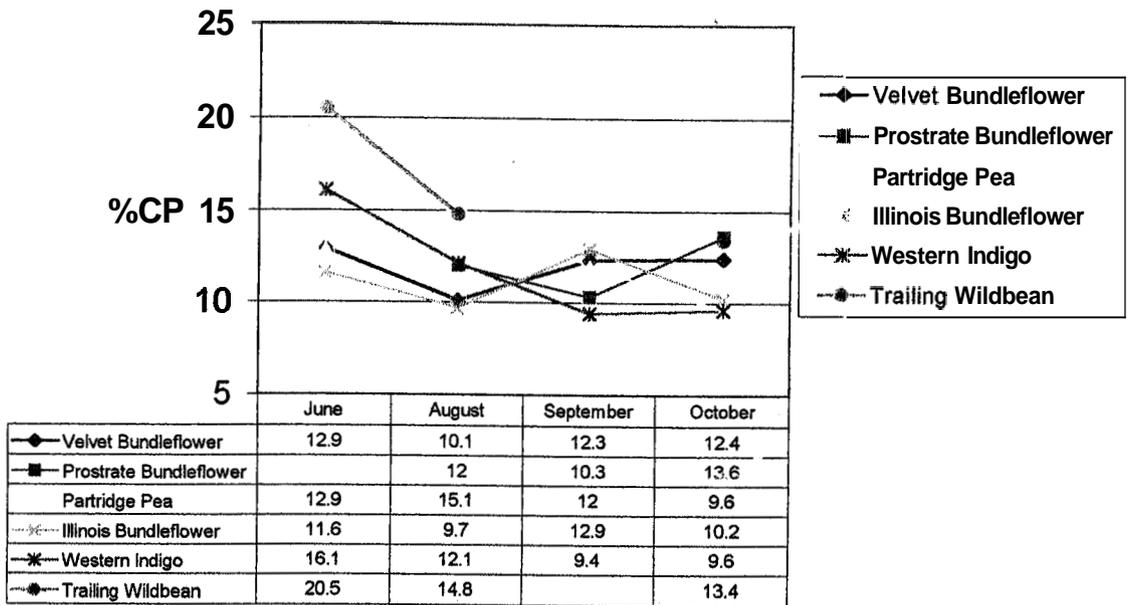
1982 Evaluation of velvet bundleflower

Accn Number	Height	Width	% Stand	Spring Vigor	Fall Vigor	
17601	5	70	10	5.00	5.00	prostrate bundleflower
18869	35	30	15	4.00	4.00	
18871	20	90	55	5.00	5.00	
27097	5	60	80	4.00	4.00	prostrate bundleflower
477961	50	30	85	3.00	3.00	
477961	35	90	55	4.00	4.00	
SUM	150	370	300	25.00	25.00	
MEAN	27.5	65	55	4.00	4.00	

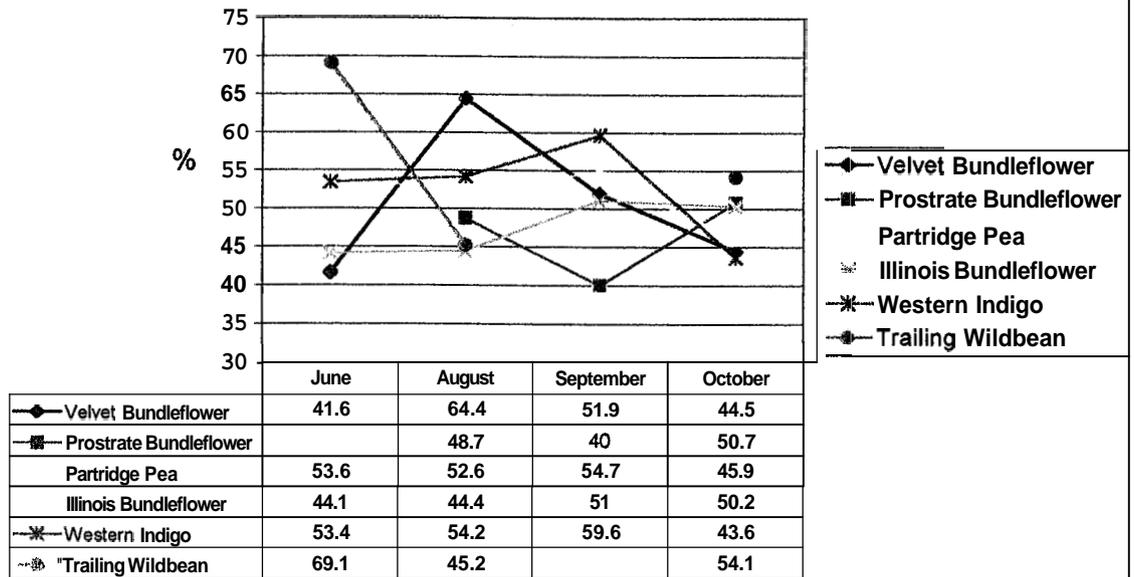
1983 Evaluation of velvet bundleflower

Accn Number	Height	Width	% Stand	Spring Vigor	Fall Vigor	Seed Amount	
17601	20	30	50	3.00	3.00	3.00	prostrate bundleflower
18868	45	35	30	3.00	4.00	3.00	
18871	35	35	20	3.00	4.00	4.00	
27097	15	30	30	4.00	4.00	3.00	prostrate bundleflower
477961	85	130	80	2.00	3.00	3.00	
477961	75	130	80	2.00	3.00	3.00	
SUM	275	390	290	17.00	21.00	19.00	
MEAN	40	35	40	3.00	3.50	3.00	

Crude Protein of Selected Native Legumes



% Digestibility of Selected Native Legumes



ATTACHMENT 2:
Environmental Evaluation of Plant Materials Releases

Name of person scoring: Morris J. Houck Date of scoring: 11-20-2002

Scientific Name: Desmanthus velutinus Common Name: velvet bundleflower

Release Name: ~~Hondo Germplasm~~

Is the plant native to the **US**? Yes

Is the plant native to the area of intended use? Yes

Authority used to determine native status: Checklist of the vascular plants of TX

What is the intended area of use for this plant? TX,OK

What is the intended use for this plant? range seeding, wildlife use, CAT,CRP,EQIP

Areas in which the release is known to be invasive or has a high probability of being invasive: none

<u>Summary of Criteria from Section A</u>	<u>Score</u>
Part 1. Impact on Habitats, Ecosystems, and Land Use	<u>0</u>
Part 2. Ease of Management	<u>12</u>
Part 3. Conservation Need and Plant Use	<u>11</u>
Part 4. Biological Characteristics	<u>24</u>

Final Determination of Release Based on the Environmental Evaluation:

- OK to Release
- OK to Release but qualify use and intended area of use*
- Do Not Release - NPL determines if release is made*
- Do Not Release - document and destroy materials

I certify that this Environmental Evaluation was conducted with the most accurate and current information possible.

Morris J. Houck 11-20-2002
Signature of Person Scoring Date

Signature of **NPL** indicating that it is OK to make the release:

Richard S. White 6/19/03
National Program Leader, PM Date

* An Environmental Assessment (EA) and/or Environmental Impact Statement (EIS) may be required prior to release. If required, attach the EA and/or EIS to this worksheet and to the release notice.

Section A. Scoring of Criteria for Impact, Management, Need and Biological Characteristics

Circle the appropriate number for each of the following criteria. Add up the scores for each part and record at the end of each part. Comments which clarify answers or provide supporting information may be included in the right margin of the worksheet or attached on a separate sheet of paper.

Part 1: Impact on Habitats, Ecosystems, and Land Use

*This section assesses the **ability** of the species or release to adversely affect habitats, ecosystems, and agricultural areas.*

- 1) Ability to invade natural systems where the species does not naturally occur**
- a) Species not known to spread into natural areas on its own 0 ✓
 - b) Establishes only in areas where major disturbance has occurred in the last 20 years (e.g., natural disasters, highway corridors) 3
 - c) Often establishes in mid- to late-successional natural areas where minor disturbances occur (e.g., tree falls, streambank erosion), but no major disturbance in last 20-75 years 6
 - d) Often establishes in intact or otherwise healthy natural areas with no major disturbance for at least 75 years 10
- 2) Negative impacts on ecosystem processes (e.g., altering fire occurrence, rapid growth may alter hydrology)**
- a) No perceivable negative impacts 0 J
 - b) Minor negative impacts to ecosystem processes 2
 - c) Known significant negative impacts to ecosystems processes 6
 - d) Major, potentially irreversible, alteration or disruption of ecosystem processes 10
- 3) Impacts on the composition of plant communities where the species does not naturally occur**
- a) No negative impact; causes no perceivable changes in native populations 0 J
 - b) Noticeable negative influences on community composition 5
 - c) Causes major negative alterations in community composition 10
- 4) Allelopathy**
- a) No known allelopathic effects on other plants 0 J
 - b) Demonstrates allelopathic effects on seed germination of other plants 3
 - c) Demonstrates allelopathic effects to mature stages of other plants 5

- 5) Impact on habitat for wildlife or domestic animals (aquatic and terrestrial), including threatened and endangered species (coordinate with USFWS and state Heritage Programs as appropriate)**
- a) No negative impact on habitat, or this criteria not applicable based on intended use for the plant 0 J
 - b) Minor negative impact on habitat (e.g., decreased palatability; lower wildlife value; decreased value for undesirable animal species) 2
 - c) Significant negative impact on habitat (e.g., foliage toxic to animals; significantly lower value for wildlife; excludes desirable animal species from an area) 5
- 6) Impact on other land use**
- a) No negative impacts on other land uses 0 J
 - b) Minor impacts (plant could invade adjacent areas and decrease its value) 3
 - c) Significant impacts (plant may alter the system or adjacent lands significantly enough to prevent certain uses) 5
- Total Possible Points 45**
Total Points for Part 1 0

Part 2. Ease of Management

This part evaluates the degree of management which might be needed to control the species or release if it becomes a problem, or eradicate the species or release if it is no longer desirable.

- 1) Level of effort required for control**
- a) Effective control can be achieved with mechanical treatment 0 J
 - b) Can be controlled with one chemical treatment 2
 - c) One or two chemical or mechanical treatments required or biological control is available or practical 5
 - d) Repeated chemical or mechanical control measures required 10
- 2) Effectiveness of community management to potentially control the plant release**
- a) No management is needed, the plant release is short-lived and will significantly decrease or disappear within 5 years under normal conditions without human intervention 0
 - b) Routine management of a community or restoration/preservation practices (e.g., prescribed burning, flooding, controlled disturbance, pasture renovation) effectively controls the release 2 ✓
 - c) Cultural techniques beyond routine management can be used to control the release 4
 - d) The previous options are not effective for managing or controlling the release 10

- 3) Side effects of chemical or mechanical control measures**
- a) Control measures used on release will have little or no effect on other plants 0
 - b) Control measures used on release will cause moderate effects on other plants 3 J
 - c) Control measures used on release will cause major effects on other plants 5

**If spreads by seed, or both seed and vegetative means. go to #4

**If spreads by vegetative means only. go to #5

- 4) Seed banks**
- a) Seeds viable in the soil for 1 year or less 0
 - b) Seeds remain viable in the soil for 2-3 years 1
 - c) Seeds remain viable in the soil for 4-5 years 3 J
 - d) Seeds remain viable in the soil for more than 5 years 5
- 5) Vegetative regeneration under natural conditions**
- a) Regeneration from resprouting of cut stumps 1 ✓
 - b) Regeneration from pieces of the root left in the soil 3
 - c) Regeneration from root or stem parts left in the soil 5
- 6) Resprouts after cutting Above-ground parts**
- a) Does not resprout or resprouts but the release is sterile and does not produce seed 0
 - b) Resprouts and produces seed in future years 3 J
 - c) Resprouts and produces seed in same year 5

Total Possible Points 40
Total Points for Part 2 12

Part 3. Conservation Need and Plant Use

This part evaluates the importance of the species or release to meet a conservation need.

- 1) Potential Use(s) of the Plant Release**
- a) Used for low-priority issues or single use 1
 - b) Has several uses within conservation 2
 - c) Has many uses within conservation as well as outside of conservation 4
 - d) Has high-priority use within conservation 5 J
- 2) Availability of Other Plants to Solve the Same Need**
- a) Many other plants available 1
 - b) Few other plants available 3 ✓
 - c) No other plants available 5

3) Consequences of <u>Not</u> Releasing This Plant	
a) No impact to conservation practices	0
b) Minor impact on one or more conservation practice	1
c) Serious impact on one conservation practice	3 J
d) Serious impact on more than one conservation practices	5
Total Possible Points	15
Total Points for Part 3	<u>11</u>

Part 4. Biological Characteristics

This part evaluates the biological properties which indicate the natural ability of the species or release to propagate and maintain itself under natural conditions. Note: these criteria relate to the species under natural conditions, as opposed to the species under managed conditions used to increase the species, i.e. seed increase programs, or specific propagation methods which do not normally occur in nature.

1) Typical mode of reproduction under natural conditions	
a) Plant does not increase by seed or vegetative means (<u>skip to #11</u>)	0
b) Reproduces almost entirely by vegetative means	1
c) Reproduces only by seeds	3 J
d) Reproduces vegetatively and by seed	5
2) Reproduction (by seed or vegetative) in geographic area of intended use	
a) Reproduces only outside the geographic area of intended use	1
b) Reproduces within the geographic area of intended use	3 ✓
c) Reproduces in all areas of the United States where plant can be grown	5
3) Time required to reach reproductive maturity by seed or vegetative methods	
a) Requires more than 10 years	1
b) Requires 5-10 years	2
c) Requires 2-5 years	3 ✓
d) Requires 1 year	5

** If reproduces only by seed, skip to #5

4) Vegetative reproduction (by rhizomes, suckering, or self-layering)	
a) Vegetative reproduction rate maintains population (plant spreads but older parts die out)	1
b) Vegetative reproduction rate results in moderate increase in population size (plant spreads <3' per year)	3
c) Vegetative reproduction rate results in rapid increase in population size (plant spreads >3' per year)	5

** If reproduces only vegetatively, skip to # 11

- 5) Ability to complete sexual reproductive cycle in area of intended use**
- a) Not observed to complete sexual reproductive cycle in the geographic area of intended use, but completes sexual reproduction in distant areas of the United States 1
 - b) Not observed to complete sexual reproductive cycle in the geographic area of intended use, but completes sexual reproduction in adjoining geographic areas 3
 - c) Observed to complete the sexual reproductive cycle in the geographic area of intended use 5 ✓
- 6) Frequency of sexual reproduction for mature plant**
- a) Almost never reproduces sexually 0
 - b) Once every five or more years 1
 - c) Every other year 3
 - d) One or more times a year 5 ✓
- 7) Number of viable seeds per mature plant each reproductive cycle**
- a) None (does not produce viable seed) 0
 - b) Few (1-10) 1
 - c) Moderate (11*1,000) 3 J
 - d) Many-seeded (>1,000) 5
- 8) Dispersal ability**
- a) Limited dispersal (<20') and few plants produced (<100) 1 ✓
 - b) Limited dispersal (<20') and many plants produced (>100) 3
 - c) Greater dispersal (>20') and few plants produced (<100) 7
 - d) Greater dispersal (>20') and many plants produced (>100) 10
- 9) Germination requirements**
- a) Requires open soil and disturbance to germinate 1 ✓
 - b) Can germinate in vegetated areas but in a narrow range or in special conditions 5
 - c) Can germinate in existing vegetation in a wide range of conditions 10
- 10) Hybridization**
- a) Has not been observed to hybridize outside the species 0 ✓
 - b) Hybridizes with other species in the same genera 3
 - c) Hybridizes with other genera 5

11) Competitive ability (of established plants)	
a) Poor competitor for limiting factors	0 J
b) Moderately competitive for limiting factors	5
c) Highly competitive for limiting factors	10
	Total Possible Points 70
	Total Points for Part 4 <u>24</u>

References

Many of the criteria used in this rating system were adapted from the following sources:

Hiebert, Ron D. and James Stubbendieck. 1993. Handbook for Ranking Exotic Plants for Management and Control. US Department of the Interior, National Park Service, Denver, CO.

Randall, John M., Nancy Benton, Larry E. Morse, and Gwendolyn A. Thornhurst. 1999. Criteria for Ranking Alien Wildland Weeds. The Nature Conservancy, Arlington, VA.

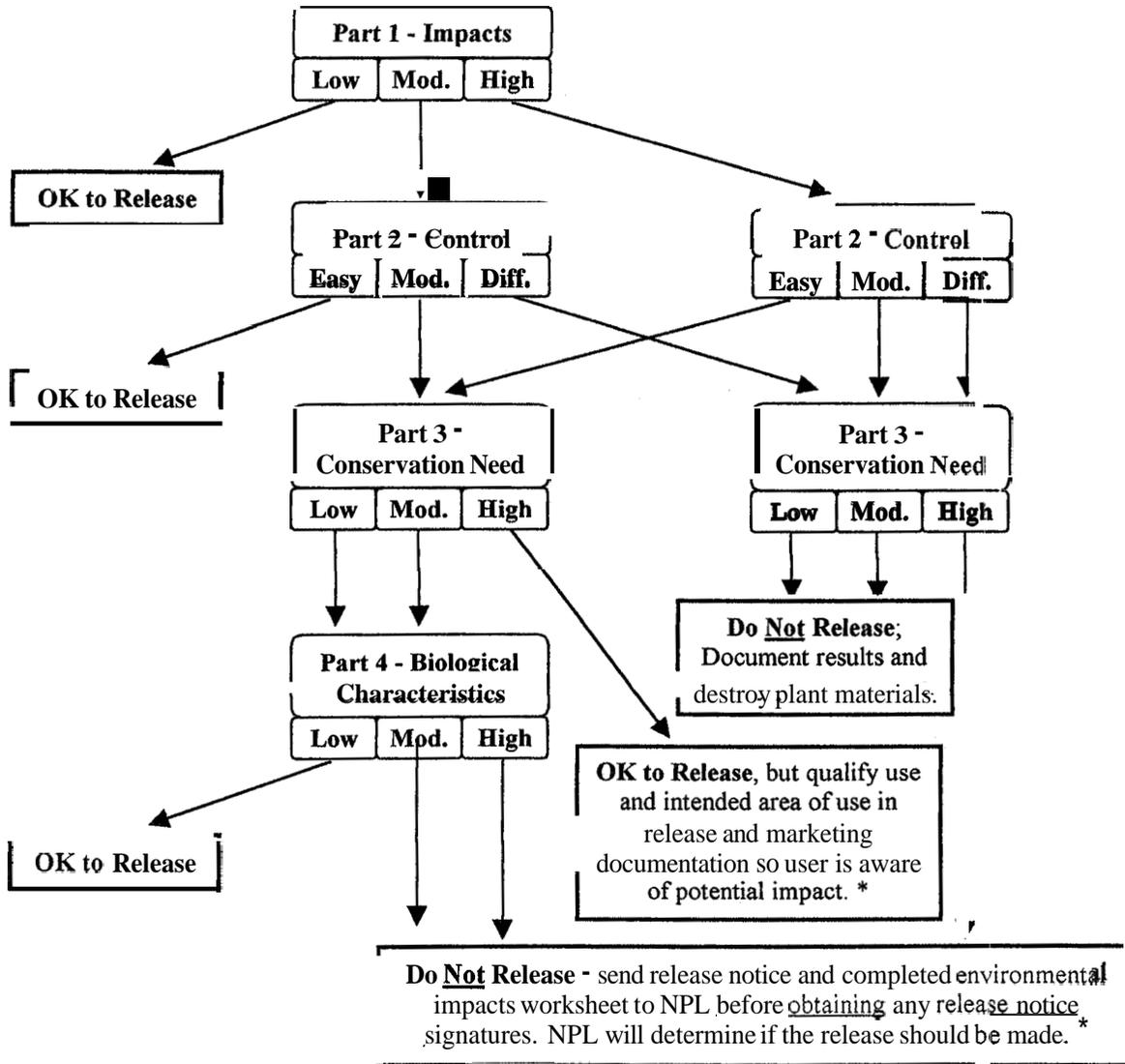
Section B. Scoring and Interpretation

Based on the scores from above, circle the points range you scored to determine the appropriate interpretation. The interpretation will be used to determine the course of action for the release.

Part	Points Scored	Interpretation
Part 1. Impacts on Habitats, Ecosystems, and Land Use	0-15 ✓	Low chance plant is going to affect the environment
	16-25	Moderate chance plant is going to affect the environment
	26-45	High chance plant is going to affect the environment
Part 2. Ease of Management	0-20 ✓	Easy to control
	21-30	Moderate to control
	31-40	Difficult to control
Part 3. Conservation Need and Plant Use	0-5	Low need
	6-9	Moderate need
	10-15 ✓	High need
Part 4. Biological Characteristics	0-25	Low chance plant is going to propagate and increase itself
	26-40 ✓	Moderate chance plant is going to propagate and increase itself
	41-70	High chance plant is going to propagate and increase itself

Section C. Action to Take for Releasing Plants

Based on the interpretation above, follow the decision tree below. Start with your interpretation rating for Part 1 (Low, Moderate, or High) and follow the appropriate arrow to the next level until you reach a decision box. Once you reach a decision box you may stop and record the decision on the first page of this worksheet.



* Indicates that an Environmental Assessment or Environmental Impact Statement may need to be prepared prior to release (see NPMM Part 540.73(a)(3)).